

# Causes of Vitreous Haemorrhage In Port Harcourt; A 3 Year Review.

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**Bassey Fiebai, Chinyere Nnenna Pedro-Egbe**

**Dept of ophthalmology, University of Port Harcourt Teaching Hospital, Port Harcourt, Nigeria.**

## ABSTRACT

**Background:** Vitreous haemorrhage is one of the causes of visual loss and arises from a number of risk factors. This study aims to expose the causes of vitreous haemorrhage in our environment and evaluate the pattern of visual loss.

**Methods:** A 3 year retrospective review of medical records of patients presenting in the outpatient clinic of the eye department in University of Port Harcourt Teaching Hospital was carried out between 2007 and 2009. Demographic data and causative factors of vitreous hemorrhage were amongst the information culled from the records and analysed.

**Results:** Twenty-six patients were seen over the period under review out of which 18 of them were males. The age range was 12-70 years. Trauma accounted for 73.1% of all the causes of vitreous haemorrhage.

**Conclusion:** Trauma is a significant cause of vitreous haemorrhage in our environment affecting the younger age group. The poor presenting visual acuity reflects the severity of causes of vitreous haemorrhage in our environment. Awareness needs to be increased on the causes and risk factors of vitreous haemorrhage.

**Keywords:** Vitreous haemorrhage; Aetiology; Vision loss; Nigeria.

**Correspondence:** Dr B. Fiebai  
E: mail: bassief@yahoo.com

## INTRODUCTION

Vitreous haemorrhage (VH) is the presence of extravasated blood within the space outlined by the zonular fibres and posterior capsule of the lens anteriorly, non pigmented epithelium of the ciliary body laterally and the internal limiting membrane of the retina posteriorly and posterolaterally.<sup>1</sup> This may result from retinal tears or neovascularisation of the retina or may be related to bleeding from preexisting blood vessels in the retina.<sup>2</sup>

The three commonest causes of VH, are trauma, proliferative diabetic retinopathy and posterior vitreous detachment.<sup>2,3</sup> Others include hypertensive retinopathy, proliferative sickle cell retinopathy, branch and central retinal artery occlusion, complications of eye surgeries, retinal micro and macroaneurysm, orbital malignancies, age related macular degeneration and Terson's

syndrome.<sup>2,4,5,6</sup>

Age, race and sex of vitreous haemorrhage have been found to correspond with the underlying disease. Patients usually present with a drop in vision which could be sudden or progressive. Visual acuity varies with the degree of haemorrhage, dense haemorrhage can reduce vision to 'light perception' In the absence of trauma there is usually no associated pain with VH.<sup>1,2</sup>

Ocular ultrasound scan is most useful in giving information regarding the state of the retina when funduscopy cannot be carried out.<sup>1,2,5</sup> Treatment is targeted at the underlying cause. However pars plana vitrectomy may be carried out where indicated.<sup>1,2,7</sup>

## METHODOLOGY

This study is a retrospective non comparative study of 26 patients who presented to the outpatient department of the eye clinic in University of Port Harcourt Teaching Hospital. Data was culled from the medical records of patients who presented with vitreous haemorrhage between January 2007 to December 2009.

Parameters evaluated included the patients' demographic data (age, sex), aetiological factors, involved eye and presenting visual acuity. Data was analysed using the statistical package for social sciences.

## RESULTS

The age range was from 12 to 70 years with a mean of 40.08 ± 14.8. Most of the patients fell into the 40-59 age group. More males were affected than females (18:8). Trauma was the commonest cause of vitreous haemorrhage accounting for 73.1% of the cases (see Table 1). Trauma was the commonest cause in the 20 -39 age group. The left eye was more involved (15) than the right eye (11). Table 2 shows the presenting Snellen visual acuity which ranged from 6/24 to

**Table 1; Cross tabulations of Age, Cause, sex and Involved Eye**

AGE (YEARS)	AETIOLOGY					SEX		EYE	
	TRAUMA	POST SURGERY	DIABETIC RETINOPATHY	HYPERTENSIVE RETINOPATHY	CENTRAL RETINAL VEIN OCCLUSION	MALE	FEMALE	RIGHT	LEFT
< 20	3	0	0	0	0	3	0	1	2
20-39	10	0	0	0	0	8	2	3	7
40-59	6	2	2	2	1	7	4	5	6
>60	0	0	0	0	0	0	2	2	0
TOTAL	19	2	2	2	1	18	8	11	15

**TABLE 2; Presenting visual acuity of 26 patients with Vitreous haemorrhage**

	VA								Total
	6/24	6/36	6/60	CF	HM	LP	NPL		
<b>CAUSE</b>	CRVO			1					1
	DM	1	1						2
	HYP	1			1				2
	POSTOP			2					2
	TRAUMA	1	2	1	5	5	4	1	19
<b>Total</b>		<b>2</b>	<b>3</b>	<b>2</b>	<b>8</b>	<b>6</b>	<b>4</b>	<b>1</b>	<b>26</b>

NPLNo light perception, CF Counting fingers, HMH and movement.

no light perception. (NPL).

**DISCUSSION**

The prevalence of vitreous haemorrhage tends to parallel the frequency of the causative disease and this depends on the study population, mean age of patients and the geographical region where the study is conducted.<sup>2</sup> Subarachnoid haemorrhage is commoner in women for instance, diabetes and sickle cell is found more in blacks, myopes tend to have an increased risk of retinal tears and age related macular degeneration is commoner in whites. However trauma is said to be the leading cause of vitreous haemorrhage in young people.<sup>2</sup>

In our series the incidence of vitreous haemorrhage was higher in the 40-59 age group, however trauma as a cause of VH, was found to be more in the 20-39 age group. Eighteen out of the twenty-six patients were males. This finding is similar to studies in western Nigeria where 12 out of 13 of the patients in that study were male.<sup>3</sup>

Ocular trauma, proliferative diabetic retinopathy and posterior vitreous detachment together make up 60-83% of Trauma accounted for 19 out of the 26 cases (73.1). The other causes of VH in this study were; diabetic retinopathy, postoperative VH, hypertensive retinopathy and central retinal vein occlusion. Rotimi et al also reported trauma to be the commonest cause of VH in Western Nigeria this was followed by proliferative sickle cell retinopathy in their series.<sup>3</sup>

Patients with VH usually present to the clinic because of the dramatic loss of vision. Visual loss in cases of vitreous haemorrhage depends on the density of the haemorrhage and even 10 microlitres of blood can reduce vision to hand movement.<sup>1</sup> Our study revealed that our patients had visual loss ranging from hand movement(HM) to 'no light perception'(NLP) (see Table 2). This pattern of the presenting visual acuity reflects the severity of the underlying cause.

B scan ultrasonography was done in all our patients to assess the state of the retina, as the bleeding in all these cases prevented a direct funduscopy.

Management of VH, involves managing the underlying cause. Our patients were managed based on the underlying

cause and none of them ended up requiring a vitrectomy.

**CONCLUSION**

This study has shown that trauma is the commonest cause of VH in our environment involving the younger age group and patients present with a significant drop in vision which emphasizes the need to create more awareness on the causes and risk factors.

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